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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,288	12/22/2000	Richard P. Modelski	P 0270187 NOR-13179BA	8168
34845	7590	05/19/2005	EXAMINER	
STEUBING AND MCGUINNESS & MANARAS LLP			DENNISON, JERRY B	
125 NAGOG PARK			ART UNIT	
ACTON, MA 01720			PAPER NUMBER	

2143

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/742,288

Applicant(s)

MODELSKI ET AL.

Examiner

J. Bret Dennison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 Januray 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Action is in response to Amendment for Application Number 09/742,288 received on 24 January 2005.
2. Claims 1-19 are presented for examination.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Cho (U.S. Patent Number 6,599,099).

3. Regarding claims 1 and 6, Cho discloses a method for manipulating data in a processor, the method comprising:

performing a conditional shift operation on an index register based on the condition of a carry flag, the condition of the carry flag having been set by a previous arithmetic operation (Cho, col. 10, line 33 through col. 11, line 10, Cho discloses performing a shift operation on an index register based on a flag value); and

performing an indexed load operation using an index register (Cho, col.11, lines 4-10).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho as applied to claim 1, in view of Narad et al. (U.S. Patent Number 6,157,955) and Gobuyan et al. (U.S. Patent Number 5,917,821).

4. Regarding claim 2, Cho teaches the limitations, substantially as claimed, as described in claim 1. Cho does not explicitly state:

transferring data from an input buffer to a packet task;

dispatching the data from the packet task manager to an analysis machine;

classifying the data in the analysis machine; and

implementing a binary search in the analysis machine.

In an analogous art, Narad teaches transferring data from an input buffer to a packet task manager (Narad, col. 9, lines 11-26, col. 15, lines 14-18);

dispatching the data from the packet task manager to an analysis machine (Narad, col. 36, lines 40-45);

classifying the data in the analysis machine (Narad, col. 37, lines 14-26);

In an another analogous art, Gobuyan teaches using a binary search on addresses for analysis (Gobuyan, col. 9. lines 34-40).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cho by the teachings of Narad and Gobuyan to provide a platform for accelerated network infrastructure applications by speeding up searches through lists of unknown addresses.

5. Regarding claim 4, Cho, Narad, and Gobuyan disclose the limitations, substantially as claimed, as described in claim 2, including transferring the data after modifying and forwarding to an output buffer (Narad, col. 9, lines 1-27).

Claims 3, 7, 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho in view of Narad et al. (U.S. Patent Number 6,157,955).

6. Regarding claim 3, Cho discloses the limitations, substantially as claimed, as described in claim 1. However, Cho does not explicitly state further comprising modifying and forwarding the data in a packet manipulator. In an analogous art, Narad teaches modifying and forwarding the data in a packet manipulator (Narad, col. 31, lines 29-32 and lines 35-53).

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7. Regarding claim 7, Cho teaches the limitations, substantially as claimed, as described in claim 6. Cho does not explicitly state:

an analysis machine having multiple pipelines, wherein one pipeline is dedicated to directly manipulating individual data bits of a bit field (Narad, col. 3, lines 56-65, col. 24, lines 50-64, col. 59, lines 39-50);

a packet task manager operationally connected to said analysis machine (Narad, col. 14, lines 53-63); and,

a packet manipulator operationally connected to said analysis machine (Narad, col. 59, line 39 through col. 60, line 10).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cho by the teachings of Narad to provide a platform for accelerated network infrastructure applications by speeding up searches through lists of unknown addresses.

8. Regarding claim 10, Cho teaches the limitations, substantially as claimed, as described in claim 7 including:

a packet task manager operationally connected to said analysis machine (Narad, col. 14, lines 53-63);

a packet manipulator operationally connected to said analysis machine (Narad, col. 59, line 39 through col. 60, line 10); and

a global access bus including a master request bus and a slave request bus separated from each other and pipelined (Narad, col. 36, lines 40-45).

9. Regarding claim 11, Cho teaches the limitations, substantially as claimed, as described in claim 7 including:

an external memory engine operationally connected to said analysis machine (Narad, col. 7, lines 63-67); and

a hash engine operationally connected to said analysis machine (Narad, col. 14, lines 52-53, col. 6, line 62 through col. 63, line 2).

10. Regarding claim 12, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

packet input global access bus software code used for flow of data packet information from a flexible input data buffer to an analysis machine (Narad, Fig. 2, col. 32, lines 1-7, col. 33, lines 64-67).

11. Regarding claims 13 and 18, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

results global access bus software code used for providing flexible access to an external memory (Narad, col. 36, lines 46-58).

12. Regarding claim 14, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

statistics data global access bus software code used for connection of an analysis machine to a packet manipulator (Narad, col. 8, lines 15-20, col 15, lines 21-22).

13. Regarding claim 15, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

private data global access bus software code used for connection of an analysis machine to an internal memory engine submodule (Narad, col. 12 ,line 50 through col. 13, line 13).

14. Regarding claim 16, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

lookup global access bus software code used for connection of an analysis machine to an internal memory engine submodule (Narad, col. 36, lines 40-45).

15. Regarding claim 17, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:

results global access bus software code used for providing flexible access to an external memory (Narad, col. 36, lines 46-58).

16. Regarding claim 19, Cho teaches the limitations, substantially as claimed, as described in claim 10 including:



a bi-directional access port operationally connected to said analysis machine  
(Narad, col. 104, lines, 50-62);

a flexible data input buffer operationally connected to said analysis machine  
(Narad, col. 15, lines 14-18); and

a flexible data output buffer operationally connected to said analysis machine (Narad,  
col. 16, lines 26-30).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cho as applied to claims 1 and 6, in view of Islam et al. (U.S. Publication Number 2003/0035430 A1).

17. Regarding claim 5, Cho teaches the limitations, substantially as claimed, as described in claim 1. However, Cho does not explicitly state processing data at a rate of at least 10 Gbs. In an analogous art, Islam teaches a programmable network device (see Abstract), processing data at a rate of at least 10 Gbs (see Paragraph 43).

Therefore it would have been obvious to a person with ordinary skill in the art at the time of the invention to have modified Cho to include processing data at a rate of 10 Gbs because it would enhance the processing speed of the data and reduce the processing time and the load on the data networks.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho as applied to claims 1 and 6, in view of Narad et al. (U.S. Patent Number 6,157,955) and Stuttard et al. (U.S. Publication Number 2002/0174318 A1).

18. Regarding claim 8, Cho and Narad teach the limitations, substantially as claimed, as described in claim 7. However, Cho and Narad do not explicitly state wherein said analysis machine is multi-threaded. In an analogous art, Stuttard teaches a parallel data processing apparatus (see Abstract), in which he teaches wherein the analysis machine is multi-threaded (see paragraphs 49-50). Therefore it would have been obvious to one in the ordinary skill in the art at the time of the invention to have modified Cho as modified, by teaching of Stuttard, because wherein the analysis machine is multi-threaded, would enable concurrent processing of multiple tasks simultaneously.

19. As to claim 9, Cho as modified, teaches wherein the analysis machine has 32 threads (see Stuttard, paragraph 153).

### ***Response to Amendment***

Applicant's arguments and amendments filed on 24 January 2005 have been carefully considered but they are not deemed fully persuasive.

Applicant's arguments with respect to claims 1-19 have been fully considered but they are not persuasive. Applicant's arguments include the failure of previously applied art to expressly disclose the teachings of "performing a conditional shift operation on an index register **based on the condition of a carry flag having been set by a previous arithmetic operation**" [see Applicant's Response, Paper#7 page 10 of 11]. A flag as known in the art is just a binary bit that denotes a condition. It is well known in the art that flags are set based on arithmetic operations (for example: overflow as the result of

addition or subtraction in an ALU). It is also well known to use flags to determine the proper condition or appropriate routine to branch to. Furthermore, the limitation "carry flag" in the independent claims has no functional relationship with any of the other elements in the claimed invention (Examiner sees no functional relationship between the limitations of claim 1 and claim 2) and therefore has very little patentable weight. The claimed invention only states that the carry flag is set by a previous arithmetic operation. The claim does not explain the purpose of this arithmetic operation and can therefore be interpreted in the broadest sense.

The Examiner emphasizes for the record that the claims employ broad language including the use of words and phrases such as "the carry flag having been set by a previous arithmetic operation" which have broad meanings in the art. In addition, the Applicant has not argued any narrower interpretation of the claim language, nor amended the claims significantly enough to construe a narrower meaning to the limitations. Since the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is required under MPEP 2111 to interpret the claim limitations in terms of their broadest reasonable interpretations while determining patentability of the disclosed invention. See also *In re American Academy of Science Tech Center*, 2004 WL 1067528 (Fed. Cir. May 13, 2004) ("While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow") Further, although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Failure for Applicant to significantly narrow definition or scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope in parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention. The Applicant is also requested to consider the cited prior art in this Office Action.

In regards to the prior art, the extension flag of Cho is a binary bit that is set based on a previous instruction. A conditional shift is performed based on the value of the extension flag. Therefore, it is evident from the mappings found in the above rejection that Cho disclosed the teaching of shifting an index register based on a carry flag, which is set by a previous arithmetic operation. Further, it is clear from the numerous teachings (previously and currently cited) that the provision for using "conditional flags" was widely implemented in the networking art.

Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not considered persuasive. It is also clear to the Examiner that Cho clearly taught the independent claims of the Applicant's claimed invention.

Applicant's arguments with respect to claims 1-19 are deemed moot in view of the following new grounds of rejection, necessitated by Applicant's amendment to the claims, which significantly affected the scope thereof.

Furthermore, as it is Applicant's right to continue to claim as broadly as possible their invention, it is also the Examiner's right to continue to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to differentiate in detail how these features are unique. As it is extremely well known in the networking art as already shown by Cho, performing a conditional shift operation based on a conditional flag is taught as well as other claimed features of Applicant's invention. By the rejection above, the applicant must submit amendments to the claims in order to distinguish over the prior art use in the rejection that discloses different features of Applicant's claimed invention.

It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art.

Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

### ***Conclusion***

**Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

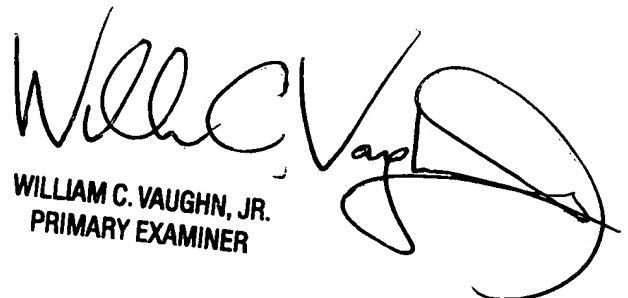
Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (571)272-3910. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703)308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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